NOV 17 1965

THE NEW ZEALAND ANTARCTIC RESEARCH PROGRAMME FOR 1965-66

LIBRARY
BOREAL INSTITUTE

Pam: (*7) NZARP 1965-66

POLAR
PAM
6339
POLARPAM

931 :(*))

LIBRARY
BOREAL INSTITUTE

WELCOME
TO
SCOTT BASE!

Revised by M. M. PREBBLE, Leader, Scott Base, 1965–66

This booklet is for the information of visitors and for all those interested in New Zealand's Antarctic Research Programme.

R. B. Thomson,
Superintendent,
Antarctic Division,
D.S.I.R.,
Wellington, N.Z.

September 1965

BOREAL INSTITUTE
LIBRARY
44704

CONTENTS

PAGE

HISTORY 5

PLANNING AND OPERATION 6

DESCRIPTION OF BASE 7

MANNING 8

DOGS 8

CLIMATE 9

SCIENTIFIC PROGRAMME 9

- A. Scott Base Activities 11
- B. Hallett Station 13
- C. Cape Royds 13
- D. Field Projects: 1965–66 Season 14
  - Geological Investigations 14
    - (1) Mt. Buckley - Mt. Darwin Area . . . 14
    - (2) Campbell Glacier Area 14
    - (3) Victoria University of Wellington Antarctic Expedition No. 10 15
  - McMurdo Ice Shelf and Ice Breakout Glaciological Projects . 15
  - Oceanographic Surveys 15
  - Biology – University of Canterbury and Dominion Museum . 15
  - Nuclear Sampling 15

HISTORIC HUT RESTORATION 15

ILLUSTRATIONS

- Cape Royds . . . . facing p. 8
- Scott Base – Photo by Guy Mannering . . . centre left
- Hallett Station – Photo by Guy Mannering . . centre right
- Dog Team Leaving Scott Base on a Field Trip . . facing p. 9

MAPS

- McMurdo Sound Area (i) . . .
- Hut Point Peninsula (ii) . . .
- Scott Base (iii) . . . .

} inside back cover

Digitized by the Internet Archive
in 2022 with funding from
University of Alberta Library

https://archive.org/details/newzealandantarc00preb

Welcome to Scott Base

Scott Base is named in honour of Captain Robert Falcon Scott, Royal Navy, leader of two expeditions to the Ross Sea sector of Antarctica. It is New Zealand's small yet important Antarctic research centre.

In 1902–03 Scott's party made the first journey south across the Ross Ice Shelf from their hut at Hut Point. Scott returned to the Antarctic in 1910, and on 17 January 1912 Scott, Wilson, Oates, Bowers, and Evans reached the South Pole to find, however, that Raold Amundsen's Norwegian team had preceded them by five weeks. On the return from the Pole the party plagued by blizzards and weakened by scurvy perished 11 miles from the well stocked One Ton Depot, and 165 miles from their hut at Cape Evans. On the top of Observation Hill the surviving members of the expedition erected a 9 ft jarrah cross as a memorial to the Polar Party.

History

As part of the New Zealand Government's contribution to the International Geophysical Year (IGY) project of 1957–58, Scott Base was constructed to serve our IGY programme and as headquarters for Sir Edmund Hillary's activities in support of Sir Vivian Fuch's successful expedition, the Commonwealth Trans-Antarctic Expedition, which made the first land crossing of the Antarctic Continent. This base was not chosen without difficulty.

New Zealand observers given the task of selecting it went to McMurdo Sound with the United States' "Operation Deep Freeze I" in the summer of 1955–56. Scott Base was scheduled to be built in the following summer.

One of the important site considerations was the position of the base in relation to the Polar Plateau through the mountains on the western shores of the sound, since the New Zealand support party were to lay supply depots on the high plateau between the Pole and McMurdo Sound. After a thorough reconnaissance often involving manhauling sledges up many miles of glaciers, Butter Point was chosen. This area at the mouth of the Ferrar Glacier and straight across the sound from Hut Point seemed to offer the best features of approach by sea and access to the plateau.

Unfortunately when the wooden HMNZS *Endeavour* reached McMurdo Sound in the summer of 1956–57, her engine power proved inadequate for penetrating the massive floe-ice accumulated on the western side of the sound; and the rough ice surface between the ship and the proposed building site precluded the transport of construction materials within the time available. The *Endeavour* was previously the *John Biscoe*, supply ship of the Falkland Islands Dependency survey.

So Butter Point was "out". However, the commander of "Operation Deep Freeze II", Rear-Admiral Dufek, considerately provided a helicopter in which Sir Edmund Hillary, leader of the New Zealand expedition, reconnoitred further and finally chose Pram Point on the eastern side of Hut Point Peninsular as the base site.

The *Endeavour* carried some of the personnel and part of the supplies of the New Zealand expedition, the rest of the base construction and operational stores being brought south in American ships of "Operation Deep Freeze II". Despite valuable time lost the base was completed and the scientific programme began on schedule.

During the IGY the United States facility at Hut Point did not operate as a scientific base. Then it was the New Zealand expedition's responsibility to furnish the important scientific data (auroral, ionospheric, seismic, etc.), linking the McMurdo area research activities with those of the United States Pole Station and the joint U.S.-N.Z. station at Cape Hallett, Victoria Land.

The Commonwealth trans-Antarctic support expedition (TAE) operating from Scott Base duly established supply depots essential to the success of the first land crossing of Antarctica.

As with most countries having IGY bases in Antarctica since 1958, New Zealand has continued to operate Scott Base in support of scientific research much of which, for maximum value to science, depends upon continuity of recorded data over a period of years: so it would seem that the history of Scott Base will not be unduly brief. Its usefulness was measurably increased during the 1962–63 season by extending some huts and erecting a new garage and a second seismic hut.

At the end of the 1960–61 season, HMNZS *Endeavour* was replaced as unfit for further Antarctic service. Her successor is a small tanker loaned by the United States to the New Zealand Navy and is also named *Endeavour*. She currently resupplies Scott Base, transports fuel for United States "Deep Freeze" operations and carries out oceanography and associated studies.

Planning and Operation

The Ross Dependency Research Committee formulates the New Zealand Antarctic Research programme. The committee comprises representatives of divisions of the Departments of Scientific and Industrial Research; the Lands and Survey; the Dominion Museum; The Royal Society of New Zealand; New Zealand universities; the Chiefs of Staff of the New Zealand Armed Forces, and the Department of External Affairs. It is representative of all scientific disciplines with Antarctic interests.

Antarctic Division, D.S.I.R., is responsible for detailed planning and implements the programme. The Division employs the staff and obtains the supplies and equipment for all Government projects. University projects are financed and equipped from university sources. The operation of all projects is directed by Antarctic Division.

The Leader, Scott Base, has full control of both Government and university projects carried out at base and in the field.

Description of the Base

Scott Base buildings were prefabricated by New Zealand and Australian firms to the design of New Zealand Ministry of Works architects. To ensure speedy erection at Pram Point the whole structure complete with all equipment was erected in New Zealand; then to facilitate reassembly every component was numbered before dismantling and shipment south. Erection at Pram Point involved little more than site preparation and the securing of fastenings.

Additions and improvements in subsequent seasons have increased the number of main base buildings from seven to 10, all now being interconnected by covered ways. Separate from the main group is a large store building that earlier housed the Antarctic flight of the Royal New Zealand Air Force; and on the fringe of the base area various scientific huts have been established to house scientific instruments. The auroral hut and equipment came from the United States base at Little America V when that station was abandoned. "Whistler" and other aerials are sited in adjacent areas. At Arrival Heights and Second Crater on Hut Point Peninsula (see map ii) are situated the Auroral Radar Station and the "Quiet" Experimental Station for upper atmosphere physics work involving the noise free radio reception.

Reference to the sketch plan will illustrate the actual layout. The base huts are utilised as follows:

Hut	*Use*
"A"	Kitchen, mess.
"B"	Laboratories – general science, biology, photography.
"C"	Sleeping quarters.
"D"	Hospital and sleeping quarters.
"E"	Administration and communications – leader's office, radio office, small post office, recreation and reception.
"F"	Ablutions facilities, sledge repair, survey room, small hobbies dark room.
"G"	Magnetometer.
"H"	Absolute Magnetometer.
"J"	Seismic.
"K"	Generators and carpenters' workshop.
"N"	Vehicle garage and supplementary generating plant.
"M"	Seismic.
"Q"	Store (food).
"R"	Cool store room.
"S"	Main bulk store.
"T"	Auroral physics.

Two diesel-driven 48 kVA generators provide the main base power supply. You will notice that accommodation is not luxurious but practical and adequate. Through the winter, each man has a room to himself. The mess provides a cheerful community living centre.

The corrugated iron tunnels, or covered ways, which link main buildings allow free movement around the base without exposure to weather, the inconvenience of changing clothes and consequent loss of time.

Hut heating is by thermostat-controlled air heaters burning kerosene. Water supply is from snow melters installed in huts where water is required. Trouble with freezing of water pipes is avoided by not reticulating the supply between huts.

Mechanical transport comprises (1965–66 season) a Nodwell personnel and cargo carrier; a Sno-cat; D–4 and Ferguson tractors; Long wheel-based Land Rover; and Weasels the use of which will be terminated shortly with replacement by Sno-Tracs. Motor toboggans and dogs are employed by field parties.

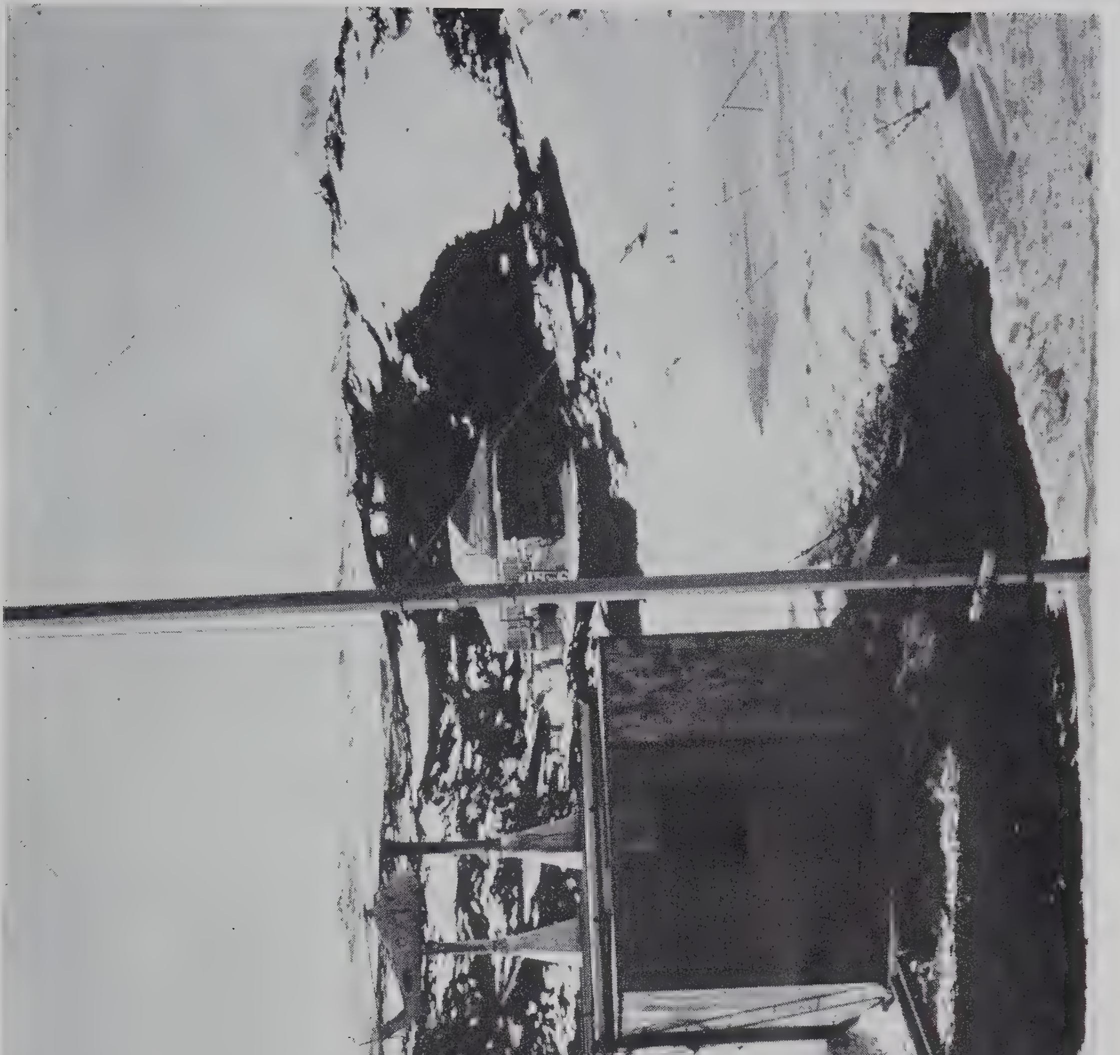
Radio communication is maintained with the New Zealand Post Office system on both C/W and voice circuits, utilising two 350-watt transmitters. During the 1965–66 season a new single side band 1 kilowatt power transmitter and single side band receiver will be installed and will provide an improvement in the quality of the circuits with New Zealand. Communication with parties operating in the field is maintained at set schedules using portable battery-operated sets designed and assembled in New Zealand.

Manning

Though it is usual for only 13 men to winter-over at base each year, accommodation has been provided for 30 in support of summer scientific programmes. Winter strength includes the base leader, base engineer, cook, electrician, general maintenance mechanic, radio officer and generally five scientists or technicians. Present policy is to have on winter strength two men drawn from field parties of the previous summer. They are allocated specific tasks of working up field data, preparing equipment for the next season's field work and caring for about 30 dogs. Of course when you see the base in summer the population may be over four times that of winter and crowded conditions may be evident. Such situations arise during the change over of winter teams, special summer research activities, the return of field parties, the presence of construction teams, and the visits of scientific and administrative authorities. Then, owing to the uncertainties of transportation to and from Antarctica, scheduled clearances of personnel may be upset.

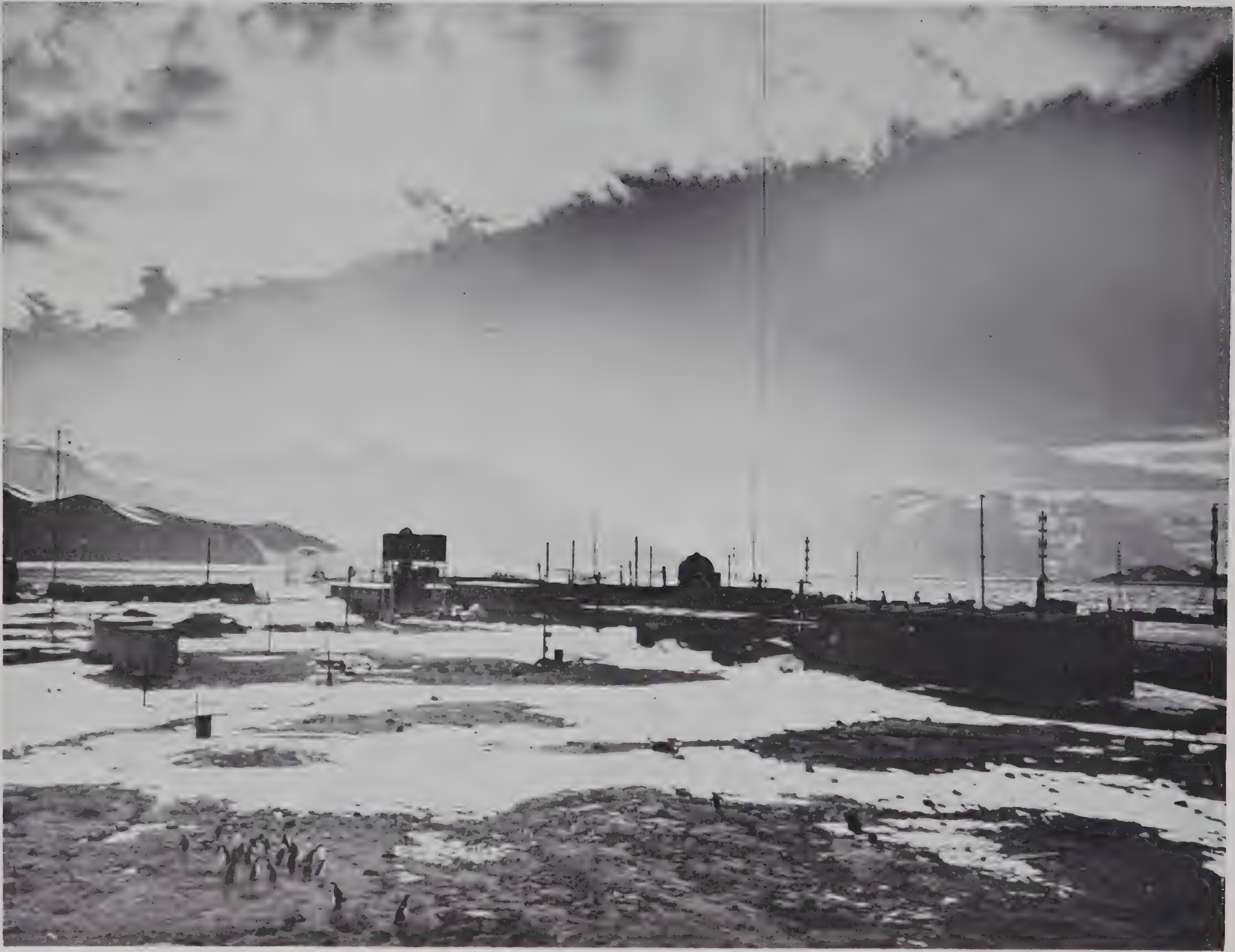
Dogs

In January 1957 sledge dogs went south with the New Zealand component of the Commonwealth Trans-Antarctic expedition and since that date dogs have been a feature of our field parties.

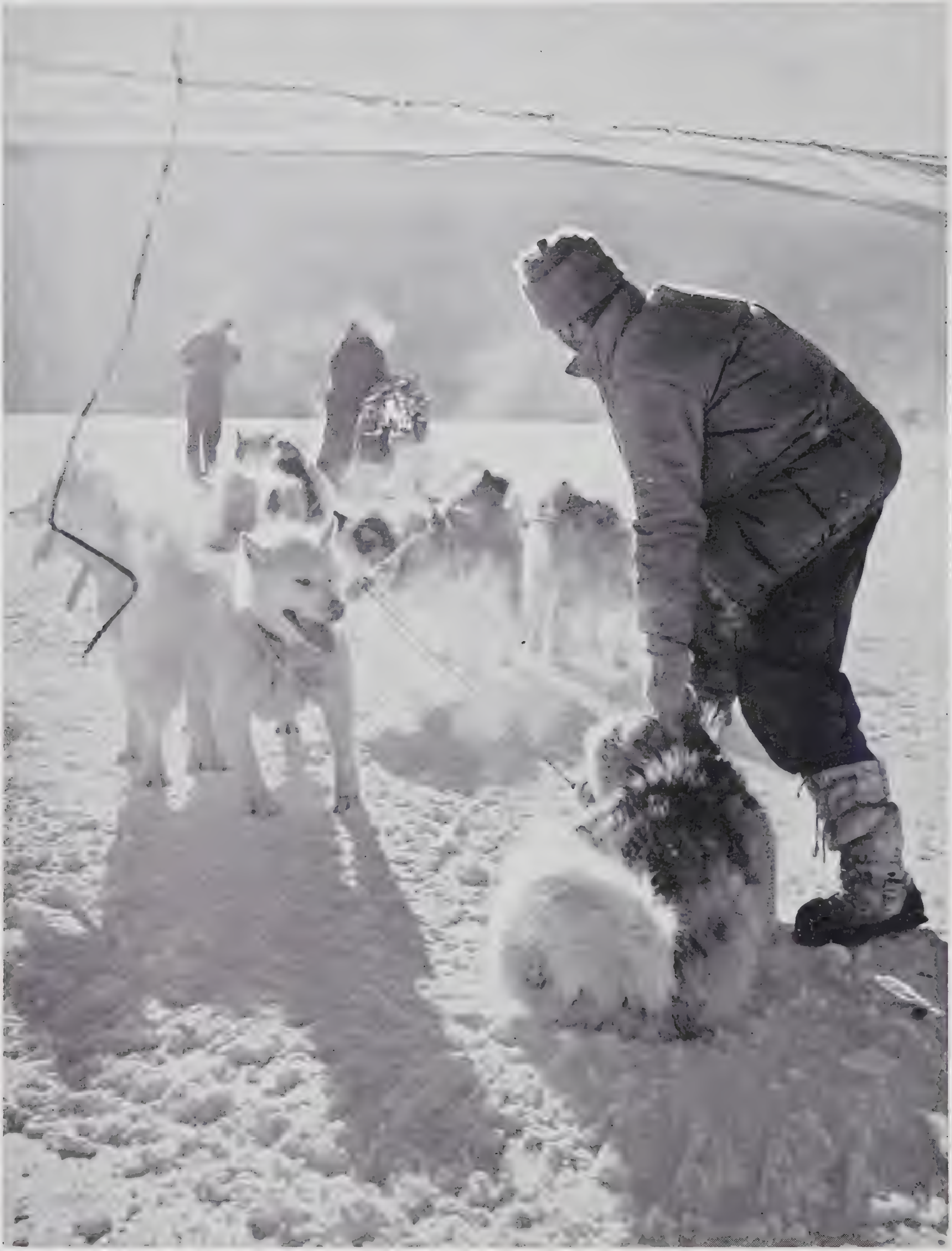


CAPE ROYDS – BIOLOGICAL HUT
WITH SHACKLETON'S HUT AND HELICOPTER IN BACKGROUND

Inset



HALLETT STATION



DOG TEAM LEAVING SCOTT BASE ON A FIELD TRIP

The original pack of 60 was drawn from three sources, the majority and best coming from Australia's Mawson Station. The breeding line of the Mawson dogs runs back through those held at the French station in Adélie Land (about 1950); thence through those at Falkland Islands Dependency Survey's Hope Bay Station (about 1948) to the original home on the west coast of southern Greenland.

Auckland Zoo provided 16 others descended from Admiral Byrd's United States Service expedition of 1939–40. A further 12 purchased from the Danish Administration came directly from Greenland, arriving in New Zealand aboard HMNZS *Endeavour*.

Subsequently Scott Base dog population has been maintained at between 40 and 60 through breeding here. In view of suspected inbreeding and lack of balance in age groupings new blood strains were introduced in 1960 with 12 dogs chosen by W. Herbert in Greenland and flown direct to New Zealand by United States M.A.T.S. Now all breeding is done at Scott Base.

The effective working life of a dog is rarely more than eight years. Breeding and performance records of all Scott Base dogs compiled in 1960 are kept up to date and include such intriguing names as – Wicky, Peter, Ivik, Butch, Apolotok, Ruth, Abul, Erina, Tutotok, Susie, Draco, Kaleralik, Jack, Mac, and Tiny.

Owing to the completion, in the 1963–64 season, of the reconnaissance geological and topographical survey of the Ross Dependency, long dog-sledge journeys are no longer necessary. With the reduced use for the dogs in the field the dog population at Scott Base is kept at about 30, which provides for three teams of nine dogs plus a few spares.

Climate

Our American friends and neighbours through the "Gap" at McMurdo enjoy a climate generally warmer than at Pram Point. We are exposed to the full strength of southerly blizzards but they are experienced infrequently. Overall we have less wind than at McMurdo Station.

Our minimum winter temperatures are around minus 50 degrees Fahrenheit, the average rarely below minus 25 and the summer reading only occasionally above freezing point.

Scientific Programme

The base and its personnel now exist for one purpose – that of advancing the frontiers of science. To this end scientific data is obtained by scientists and technicians at base and as members of mobile and static parties in the field. When you consider the provision of air and sea transport and the quantities of fuel and other supplies necessary to sustain planes, ships, and men in their tasks, you will realise that logistic support for a scientific programme is impressive.

The mobile field parties have been engaged mainly upon geological and topographical surveys and for that class of work travel with dog teams has been customary although some parties do use man-hauled sledges. Polaris motor toboggans introduced during the 1962–63 season are fast and for some tasks efficient, but they are unlikely to completely displace dog teams which provide a safer means of transport in crevassed and mountainous areas. Dogs also can be wonderful companions on long journeys, a psychological consideration of some weight.

Up to 1960 air support in Antarctica was provided by the Antarctic flight of the Royal New Zealand Air Force. Since then generous air support for our field activities has been given by the VX6 Squadron of the United States Naval Support Force under Government agreement and in return for base facilities granted the Support Force in Christchurch, New Zealand.

The relatively static field parties operate in various localities upon research ranging from glaciology and soil survey to bird and animal biology.

Research by base parties comprises observatory disciplines in seismology, geomagnetism, and ionospherics; and studies of specific aspects of the upper atmosphere with particular reference to auroral regions and that beyond 50 kilometres above the earth. Radio, radar, and optical techniques are used. The greater part of base scientific activity is concentrated in the main laboratory. Ancillary establishments are the auroral hut; the auroral radar station and "Quiet" experimental station at Arrival Heights (about 2 miles NW from Scott Base, map ii); a seismic hut and two magnetic huts.

The New Zealand Oceanographic Institute's participation in the Antarctic research programmes takes the form of continuing projects in physical oceanography, geology, and marine biology, utilising HMNZS *Endeavour* in the Ross Sea and Southern Ocean. Distribution studies of benthic animals on the Macquarie ridge; sediment and benthic sampling in specified areas of the Ross Sea; sounding; surface temperature recording and magnetometry are tasks performed afloat.

On behalf of the Geophysics Division, D.S.I.R., HMNZS *Endeavour* carries out a marine traverse utilising a proton magnetometer between New Zealand and McMurdo Sound.

Nuclear science is served by the collection of air, snow, and water samples. Meteorology includes direct reading or authographic records of standard climatological data, i.e., air temperature, pressure, humidity, wind velocity, cloud cover, and solar radiation.

The International Year of the Quiet Sun (IQSY) began in 1964 and called for some intensification of base scientific activities. Emphasis was placed on upper atmosphere work during this period, when solar flares were at a minimum.

A. SCOTT BASE ACTIVITIES

Note: On request the base scientific staff will readily supply details of all equipments

Ionospherics

Scott Base is one station in a world network of stations which record continuously the state of the ionosphere with a vertical incidence recorder. A panoramic ionosonde, designed and constructed in New Zealand, sweeps from 1–25 megacycles in seven seconds at five-minute intervals to provide data from Scott Base to be used at world centres for the prediction of radio operating frequencies. Ionospherics is under the aegis of the Geophysical Observatory, Geophysics Division, D.S.I.R., Christchurch.

Whistlers

VLF radio signals propagated over exospheric paths are recorded. Some of the electrical energy produced by lightning is in the radio frequency spectrum. A part of this radio frequency energy passes through the ionosphere and propagates along the lines of the earth's magnetic field which extends many earth diameters into space. Where these lines of magnetic force come into the earth the radio signals produced by lightning can be intercepted by a specially constructed receiver operating in a frequency range of 1–15 kc/s. They are received as different types of whistle, hence the name. Research on these transmissions is still largely a basic study of the mechanics of propagation, nature of those regions commonly associated with Van Allen belts, interaction of solar and geophysical fields, etc. Because of its location, Scott Base is an important station for this research, and equipment has been operating since 1958 when the first observation of whistlers at such a high latitude was made. The recording programme is synchronised with a world pattern of recording stations. This research is conducted under the aegis of the Physics and Engineering Laboratory, D.S.I.R., Lower Hutt.

Auroral Physics

New Zealand is uniquely situated for studies of the aurora. With stations at Pole (U.S.), Scott (N.Z.), Campbell Island (N.Z.), Invercargill (N.Z.), Lauder, Central Otago (N.Z.), Christchurch (N.Z.), and Wellington (N.Z.), there is a North-South line of observing points which transects the auroral zone ringing the Antarctic Continent. At these points there are various scientific tools for the auroral research programme which is conducted by the Physics and Engineering Laboratory's Auroral Station, Lauder, Central Otago. At Scott Base, a key station in the programme, a special auroral hut houses all-sky cameras, a spectro graph, and a photometer. A complex programme operates during the hours of darkness. At Arrival Heights (500 ft approx. elevation), five miles from Scott Base on the Hut Point Peninsula, New Zealand operates an automatic auroral radar station. This equipment records echoes caused by disturbances of the ionospheric current system, and associated with aurorae at heights of about 110 km. and at ranges of up to 1400 km. Two aerial systems are used to "bracket" the South Magnetic Pole, and attention is directed towards examining circulating currents around this Pole.

Geomagnetism

In this standard observatory activity, three independent recording systems are operated:

(a) Wide Range three-component system with La Cour magnetographs.

(b) Quick run three-component system with La Cour magnetographs.

(c) Fluxgate magnetometers reading magnetic declination only.

Earth current observations and weekly absolute magnetic observations are also being made. Geomagnetism is under the aegis of the Magnetic Survey, Geophysics Division, D.S.I.R., Christchurch.

Earth Currents

During the 1964–65 season a programme measuring electric currents in the earth was established at Scott Base, as this year was the International Year of the Quiet Sun, and solar flares reached a minimum as compared with the International Geophysical Year in 1957–58. Two sets of electrodes, sunk 10 ft deep through the permafrost, were spaced 4,000 yards apart, one for north-south readings, and the other for east-west readings. This electric current study, which results from variations in the earth's magnetic field, is one method of observing solar and ionospheric activity which has important effects on radio communication. This programme is under the aegis of the Magnetic Survey, Geophysics Division, D.S.I.R., Christchurch.

Seismology

Sited on rock and located adjacent to Antarctica's major mountain chain stretching from Cape Adare in the north to beyond the Beardmore Glacier southward, Scott Base is of strategic importance in Antarctic seismology. Additions made to the science laboratory in 1962–63 permitted the setting up of new American equipment, one of 120 identical equipments which the United States Coast and Geodetic Survey is giving to countries throughout the world to establish standard earthquake recording over a global network. New Zealand is responsible for three other such stations – at Hallett Station, Antarctica; Wellington, New Zealand; and Apia, Samoa.

A Willmore seismometer connected to a magnetic tape recorder is installed at base for the study of microseisms. Seismology is under the aegis of the Seismological Observatory, Geophysics Division, D.S.I.R., Wellington.

"Quiet" Experimental Station

Some of the topics in the Scott Base programme require for their successful operation a site which is free from man-made electrical noise. New Zealand has therefore established at Second Crater, 1,000 yards from the Auroral Radar Station, a small experimental station for studying earth currents, microseisms, VLF propagation and installed equipment for receiving signals from a Polar Ionosphere Beacon Satellite. These researches are under the aegis of divisions of D.S.I.R. whilst the Beacon Satellite equipment is under the aegis of the University of Auckland.

Beacon Satellite Programme

The installed equipment for this project at the "Quiet" Experimental Station at Second Crater, started operation after the launching from the Vandenburg Air Base of the Polar Ionospheric Beacon Satellite 5–66 on 10 October 1964. The satellite orbits the earth 14 times a day, and the continuous signals which it transmits pass through the ionosphere before being recorded at the receiving stations at Auckland, Wellington, Invercargill, Campbell Island, and Second Crater. These signals provide information on ionospheric density and on any irregularities in the ionosphere, such as the slow, regular fading known as Faraday Rotation. The recording of the signals on three separate receivers is automatic, but scientists from Scott Base visit Second Crater every second day to ensure that the instruments are functioning correctly, as well as to make the periodical change of the record roll.

B. HALLETT STATION

Hallett Station, located some 400 miles north of Scott Base, is scenically situated on a promontory in Moubray Bay facing the spectacular Victoria Land mountains. This promontory is also the home of up to 100,000 Adélie penguins. Since its establishment in 1956–57, and until 1964, Hallett's operation and scientific programme has been shared between the United States and New Zealand. Whilst the United States maintained the station, provided the support staff, and scientists for meteorology, cosmic rays, and part of the auroral programme, New Zealand provided a scientific staff of three each year who maintained the scientific programme in ionospherics, seismology, geomagnetism, and the greater proportion of the auroral programme. Also every other year New Zealand provided the scientific leader. Unfortunately a fire in March 1964 destroyed the main scientific building and auroral tower, and it was decided to close the base down during the winter months beginning in 1965. However, during the summer months Hallett is operated as a meteorological, navigational, and biological base, with New Zealand biologists working on penguin and skua studies in the area.

C. CAPE ROYDS

At Cape Royds, some 25 miles north of Scott Base on the western side of Ross Island, a combined biological laboratory and sleeping hut was erected by Scott Base personnel in September 1963. Cape Royds is the site of Shackleton's hut for his 1907–09 expedition, and is also the location of the most southerly Adélie penguin colony in the world. Biologists from Canterbury

University have used this hut each summer, since 1963, as a headquarters for their studies on the penguins, skuas, and seals in this vicinity. The hut is a prefabricated building of 400 sq. ft., similar in design to the Scott Base buildings and is completely self-contained with an oil-fired heating stove, snow melter, laboratory facilities, and sleeping accommodation for four men.

D. FIELD PROJECTS (1965–66 Season)

Parties of New Zealand scientists and surveyors are working in the following regions during the 1965–66 season. Further information can be obtained from the leader or the public information officer at Scott Base.

Geological Investigations

The 1963–64 season saw the completion of New Zealand's major field project comprising the reconnaissance geological and topographical mapping of the Ross Dependency sector of Antarctica. The 1964–65 season commenced a new phase of detailed geological studies in specific areas of interest, which will be continued during 1965–66. Since 1957 New Zealand field parties have surveyed approximately 140,000 square miles of territory extending from Cape Adare to the north and southwards to the Axel Heiberg. These surveys have covered the mountainous territory between the coast and the Polar Plateau nearly 300 miles westwards in the north and to within 260 miles of the Pole in the south. The results of this mapping programme have revealed anomalies and gaps in the geology of this extensive region. Investigations in 1964–65 and in 1965–66 will help to resolve these discrepancies with the objective of producing comprehensive geological maps of the Ross Dependency sector on a scale of 1 : 1,000,000 or 1 : 2,000,000.

(1) *Mt. Buckley - Mt. Darwin Area*

A four-man Geological Survey party operating on foot, will be flown to these two 8,500 ft nunataks, at the head of the Beardmore Glacier, some 500 miles south of Scott Base, in November. For about a month the party will complete a stratigraphical study of the coal measures and limestones of these two nunataks. This will enable important comparisons to be made with the geological work accomplished in 1961–62, by a New Zealand field party in the Queen Alexandra Range, to the north of the Beardmore Glacier.

(2) *Campbell Glacier Area*

A four-man Geological Survey party will be flown 250 miles north of Scott Base to near Inexpressible Island in Terra Nova Bay. From here the party, using motor toboggans, will cross into the Campbell Glacier and conduct geological studies along its western side for about a month. This work will help to solve some anomalies, and fill in some gaps, in an area that a New Zealand field party first explored in 1962–63.

(3) *Victoria University of Wellington Antarctic Expedition No. 10*

This season VUWAE will operate 250 miles north of Scott Base on Inexpressible Island, as well as working in the McMurdo Dry Valley complex, the scene of many previous VUWAE's. On Inexpressible Island VUWAE will study the exposed basement complex and salt deposits, and in the dry valleys will investigate granites.

McMurdo Ice Shelf and Ice Breakout Glaciological Projects

The intensive study of the ice shelf between Ross Island, Black Island, White Island, and the mainland will be continued for the fourth consecutive season. This project will involve three or more men working from Scott Base with a Sno-Cat, motor toboggan, and dog teams. The object is to measure the rate and direction of flow of the McMurdo Ice Shelf, the increase and decrease in snow levels at various points in different seasons and the mechanics of the summer ice breakout in McMurdo Sound. Markers and survey beacons have been erected to measure movement, and other markers record accumulation, ablation, or a decrease in snow level due to evaporation and wind. In this way it is hoped to draw up a snow budget of the McMurdo Ice Shelf.

Oceanographic Surveys

Hydrological and magnetic measurements will be taken aboard HMNZS *Endeavour* while on passage between New Zealand and McMurdo Sound during her two cruises to the Antarctic.

Biological Studies – University of Canterbury and Dominion Museum

A four-man party from the Zoology Department of the University of Canterbury will continue its studies of the Adélie penguin, McCormick skua gull, and the Weddell seal at Cape Royds and Scott Base. A second party of three men under the aegis of the Dominion Museum will conduct comparative studies on the Adélie penguin and skua gull at Cape Hallett.

Nuclear Sampling

The Institute of Nuclear Sciences will continue to use samples of Antarctic snow, ice and water to provide basic data on nuclear products occurring both naturally and as a result of nuclear explosions.

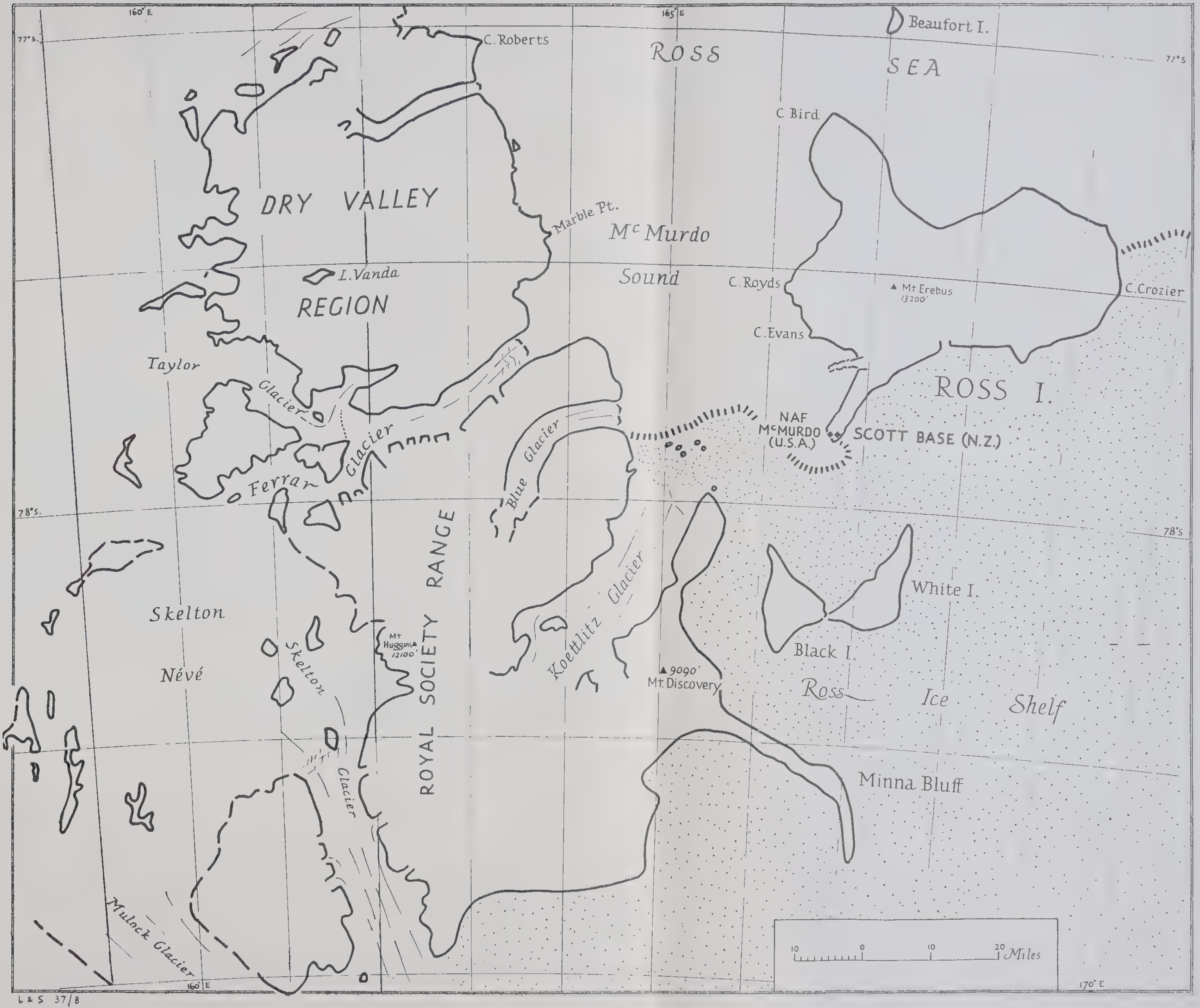
Historic Hut Restoration

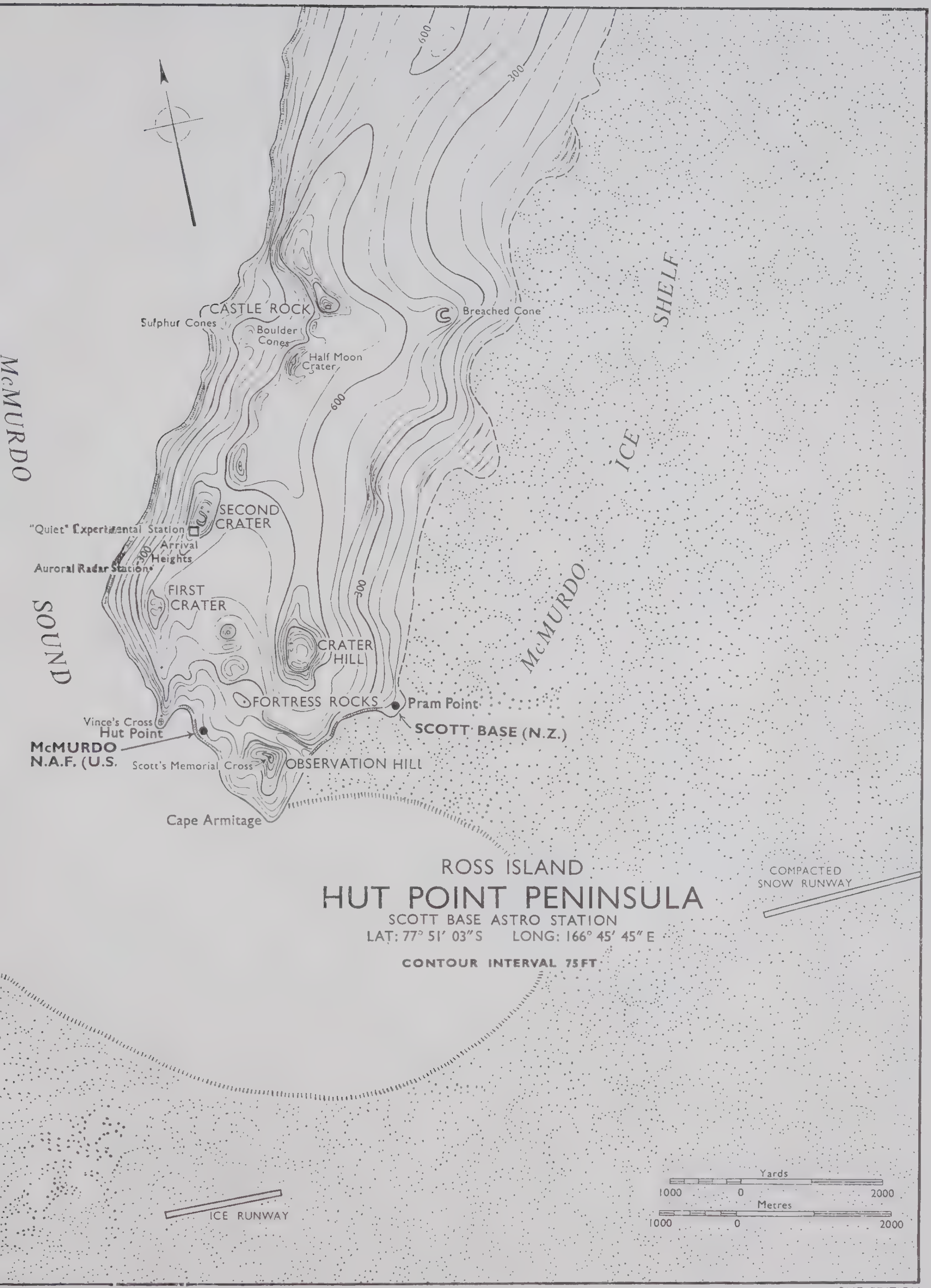
On Ross Island there are three historic huts which since 1960 have been excavated and restored to an "as was" condition by New Zealand Antarctic Society volunteers and D.S.I.R. personnel, with American assistance. In

1960–61 the hut at Cape Evans, which was Captain Scott's headquarters for his last, tragic expedition in 1910–13, and the home for the Ross Sea component of Shackleton's Trans-Antarctic Expedition in 1914–17, was restored. Also the hut at Cape Royds, which was Shackleton's headquarters for his 1907–09 expedition, was made weatherproof during the 1960–61 season. Finally, over the last two seasons, the hut at Hut Point, which was Scott's base for his 1901–04 expedition, and the temporary camp of many subsequent parties, has been restored and renovated.

If you read this booklet again when you have returned to warmer climes, think for a moment of the Kiwis at Scott Base. We hope you have enjoyed your visit as much as we enjoyed meeting you.

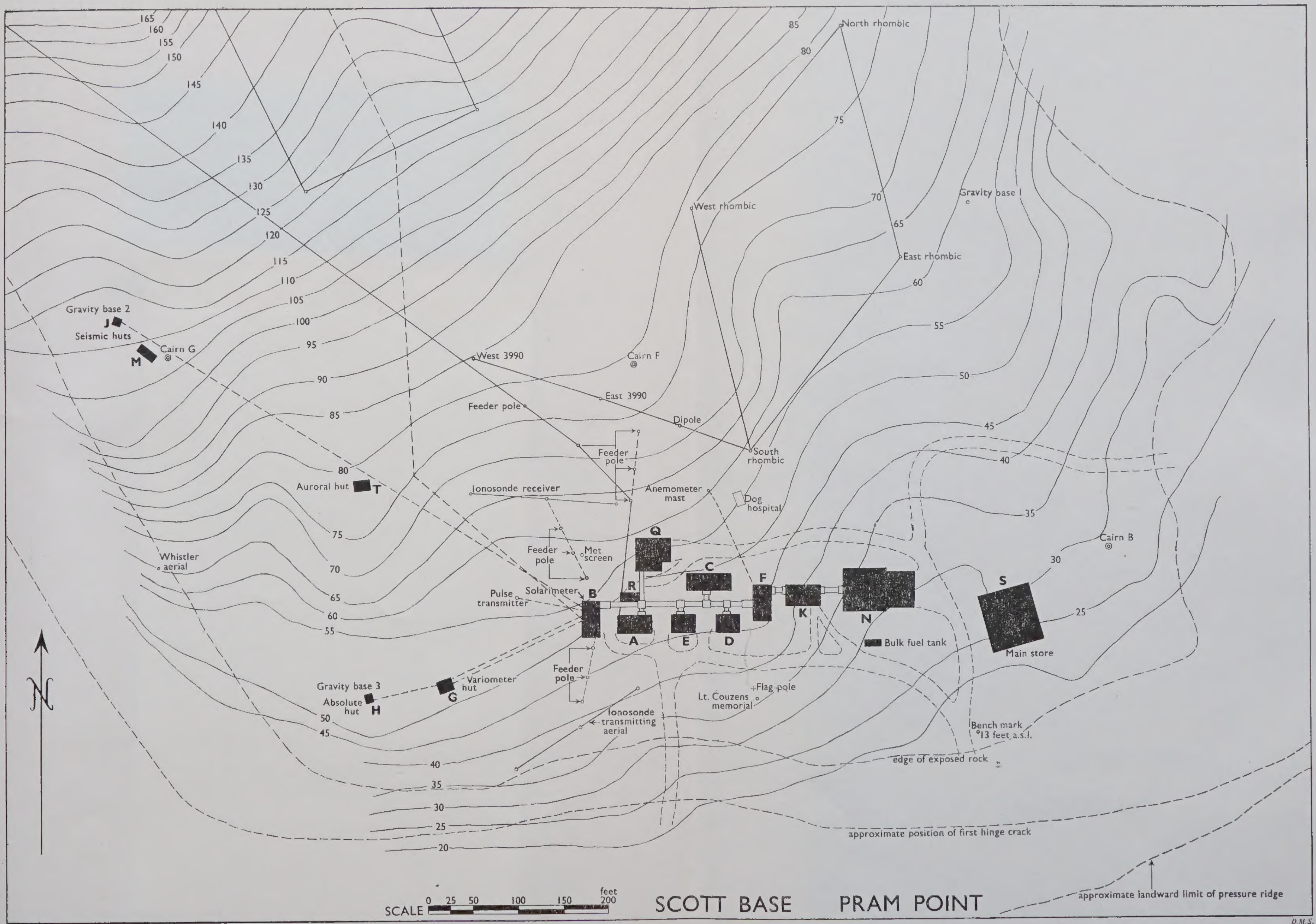
R. E. OWEN, GOVERNMENT PRINTER, WELLINGTON, NEW ZEALAND—1965
6220—65 G


160° E
165° E
77° S
77° S
78° S
78° S
160° E
170° E
C. Roberts
Beaufort I.
ROSS
SEA
C Bird
DRY VALLEY
REGION
L. Vanda
Marble Pt.
Mc Murdo
Sound
C. Royds
C. Evans
Mt Erebus
13200'
C. Crozier
ROSS I.
Taylor
Glacier
Ferrar
Glacier
Blue Glacier
NAF
McMURDO
(U.S.A.)
SCOTT BASE (N.Z.)
ROYAL SOCIETY RANGE
Mt Huggins
12100'
Skelton
Névé
Skelton
Glacier
Koettlitz Glacier
9090'
Mt. Discovery
White I.
Black I.
Ross Ice Shelf
Minna Bluff
Mulock Glacier
10 0 10 20 Miles
L & S 37/8



& S.19

2ND EDITION



SCOTT BASE PRAM POINT

L & S 9

Date Due

44704

Pam:(*7)
NZARP
1965-66

PREBBLE, M.M.

The New Zealand Antarctic Research Programme for 1965-66: Scott Base.

44704

BOREAL INSTITUTE
LIBRARY

University of Alberta Library
0 1620 0340 2193